

CHAPTER 5. LEADING SECTORS FOR U.S. EXPORTS AND INVESTMENTS

Thailand was the world's fastest growing economy between 1985 and 1995. After the devastating economic shock to the economy in 1997-98, Thailand's economy posted 4.3 percent growth in each 1999 and 2000. This year, however, the Bank of Thailand has projected GDP growth of under 2 percent growth, due the slowdown in the global economy and soft demand for Thai exports (which largely led Thailand's recovery), as well as weak domestic consumption and investment.

Although these factors will restrain growth prospects in the near-term, Thailand is expected to weather the upcoming period of slower growth without a return to the deep recession of 1997-98. The country's external situation has considerably improved since that period, with foreign exchange reserves restored to comfortable levels, a decline in external debt as a percentage of GDP, and continued current account and trade surpluses, despite the fall-off in exports. Since 1998, Thailand has implemented structural measures that address the underlying causes of the economic crisis, including financial sector reforms resulting in better capitalized banks, improved regulatory and supervisory regimes, and a more balanced financial system.

Still, there are risks that need to be managed in the economy, particularly addressing the continued high level of distressed assets in the banking system and the need to accelerate progress in corporate debt restructuring. The government of Prime Minister Thaksin Shinawatra, which took office in February 2001, has introduced a number of fiscal stimulus programs to support recovery, including a plan to promote debt restructuring through formation of a national asset management corporation. Other planned policy measures are aimed at supporting small and medium-sized Thai companies through such means as establishment of an SME bank to make low-interest credit available.

Given Thailand's economic uncertainties and its location halfway around the globe from the U.S., the Thai market may often be left off the list of potential export markets for many American companies. However, U.S. firms should keep in mind that Thailand's economic evolution over the past two decades has resulted in a rather diversified economy increasingly open to foreign trade and investment. While formerly high growth rates have slowed, U.S. products and services can contribute to current Thai economic goals of building a competitive export base, particularly in sectors such as electronics, automotive products, and processed food; completing major infrastructure projects; advancing national imperatives to improve education, IT usage and healthcare; and preparing for privatization of transportation, telecommunications, and power generation. In addition, Thailand's rapid growth in the past 15 years has swelled the ranks of the country's middle class, which will resume consumption once recovery becomes fully established.

In surveying the Best Prospect economic sectors that follow, American companies are advised to evaluate the many commercial opportunities that are available in Thailand

based on the forward-looking vantage point of the year 2002, rather than focusing on the current softness in Thailand's economy.

MARKET OVERVIEW

Best Non-Agricultural Industry Sector Prospects for Thailand are as Follows:

1. Airport and Ground Support Equipment (APG)
2. Franchising Services (FRA)
3. Automotive Parts/Services (APS)
4. Computer Software (CSF)
5. Laboratory and Scientific Equipment (LAB)
6. Education and Training Services (EDS)
7. Pollution Control (POL)
8. Computer Services (CSV)
9. Leasing Services
10. Medical Devices (MED)
11. Computers & Peripherals (CPT)
12. Telecommunications Equipment (TEL)
13. Water Resource Equipment and Services (WRE)
14. Electronic Industry Production / Test Equipment (EIP)
15. Food Processing Equipment (FFP)

BEST PROSPECTS FOR NON-AGRICULTURAL GOODS AND SERVICES

1. AIRPORT AND GROUND SUPPORT EQUIPMENT (APG)

Thailand has twenty-eight commercial airports, five of which are international airports located in major cities--Bangkok, Chiangmai, Chiangrai, Hadyai and Phuket—and the other provincial facilities serving a much smaller number of passengers. The largest airport is Bangkok International Airport (BIA) with current capacity of 34 million annual passengers (MAP), which is forecast to grow to 50 MAP by 2006. To accommodate this increase, the Thai government is underway with construction of a replacement airport (known as Suvarnabhumi or, more colloquially, NBIA) in southeast Bangkok, which has an estimated budget \$2.6 billion and is scheduled to be fully operational by 2005.

As of September 2001, the tender for construction of NBIA's passenger terminal was about to be re-bid, with a total estimated budget of about \$1 billion. Four major consortia, each with both Thai and Japanese partners, are expected to vie for the contract. While up to 80 percent of the construction materials are expected to be sourced in Thailand, a variety of opportunities exist for U.S. suppliers of specialized AGS equipment not manufactured in Thailand, such as safety & security equipment/systems, towing tractors, people moving equipment, information management systems, meteorological devices, signboards and signs, lighting equipment, fire rescue equipment,

power distribution equipment, passenger bridges, baggage handling systems, and navigation, radar, and aeronautical communication equipment.

Beyond opportunities connected with construction of NBIA's passenger terminal complex, excellent prospects also exist for U.S. firms to participate in subsequent phases, including construction and operation of ancillary facilities such as the cargo and air express terminals, medical and hotel facilities, fueling stations, parking facilities, and catering facilities. The New Bangkok International Airport Co., the state enterprise in charge of NBIA's development, is looking for concessionaires and strategic partners to construct and manage these facilities.

Market Statistics (US\$ Millions)

Airport and Ground Support Equipment Market in Thailand

	<u>2000</u>	<u>2001</u>	<u>2002(e)</u>	Projected Average Annual Growth Rate for <u>Following 2</u> <u>years (%)</u>
A. Total Market Size	29.0	48.7	343.1	5
B. Total Local Production	1.4	2.3	16.3	5
C. Total Exports	-	-	-	0
D. Total Imports	27.7	46.4	326.9	5
E. Import from the US	9.3	15.6	109.8	5
Exchange Rate	38	45	45	

Notes: The above statistics are unofficial estimates, (e) represents estimate. Exchange rates are based on annual averages.

2. FRANCHISING SERVICES (FRA)

The franchise industry remains very attractive to Thai investors. In 2000 in Thailand there were approximately 160 franchise systems operating 6,500 units, generating annual sales of approximately US\$1.7 billion, with international franchises holding a 70 percent market share. The U.S. has 80 percent of the international franchise market, and quality, standards, brands, and innovations offered by U.S. franchisers are well known to potential Thai investors, even if U.S. franchising fees are perceived as very high and start-ups as requiring a huge capital investment, giving the weaker baht.

The following sectors offer best prospects for American franchisors: food and restaurants; retail and convenience stores, hotel chains, automotive aftermarket services, cleaning and maintenance services, and Internet-related services. Of these segments, fast food and family restaurant franchises account for 45 percent of all local and foreign franchise operations, with the total expected to increase from 1,500 to 2,000 units by the end of 2001, and 20 percent growth after that. Retail and convenience stores are second in importance, with a 35 percent share and over 3,500 outlets. Besides this, the service

franchise sector offers new possibilities is relatively small and new for Thai investors, particularly in the car care area.

Market Statistics (US\$ Millions)
Franchising Services Market in Thailand

	<u>2000</u>	<u>2001e</u>	<u>2002e</u>	<u>Projected Average Annual Growth Rate for Following 2 years (%)</u>
Total Franchise Sales	1,697	2,036	2,443	20
Sales by Local Firms	509	611	733	20
Sales by International Firms	1,188	1,425	1,710	15- 20
Sales by US Firms	950	1,140	1,368	15 -20
Exchange Rate	40	45	45	

Note: The above statistics are unofficial estimates, (e) represents estimate. Exchange rates are based on annual averages.

3. AUTOMOTIVE PARTS AND SERVICES/EQUIPMENT (APS)

Thailand has the largest vehicle assembling capacity, and the highest quality parts manufacturing capability in ASEAN. The country's thirteen assemblers, owned and operated by the world majors, have an annual assembling capacity of more than one million vehicles. One-ton pick up trucks and Japanese make vehicles are the biggest sellers in Thailand. In 2000, domestic vehicle sales increased 20.1 percent to 262,250 units, and exports by 22% to 152, 836 units. With this trend expected to continue, good prospects exist for American firms to play a larger role in supplying parts to Thailand's vehicle industry, either by supplying directly from the U.S. or from local manufacturing operations in which they become involved.

As the Thai automotive sector grows, there are good opportunities for U.S. franchises in automotive after-market services such as transmission services, car care centers, brake system services, exhaust services, and so forth. Since most new cars in Thailand have automatic transmissions and more sophisticated, computerized features requiring special servicing, the market is very open to U.S. franchises that can handle such requirements, which local Thai firms cannot. Best potential exists for general automotive service equipment & tools tire (wheel) & brake service equipment, and body and paint repair service equipment.

Market Statistics (US\$ Millions)**Automobile Parts and Services/Equipment Market in Thailand**

	2002	2001e	2002e	Projected Average Annual Growth Rate for Following 2 years (%)
A. Total Market Size	2,182	2,724	3,269	15-20
B. Total Local Production:	1,331	1,663	1,995	15-20
C. Total Exports	494	620	744	15-20
D. Total Imports	1,345	1,681	2,017	15-20
E. Import from the US	37	47	56	15-20
Exchange Rate	40	45	45	

Note: The above statistics are unofficial estimates, (e) represents estimate. Exchange rates are based on annual averages.

4. COMPUTER SOFTWARE (CSF)

Computer software demand in Thailand is being stimulated by the economy's continuing adjustment to the economic crisis of 1997-98, including restructuring of business operations, expansion of multinational companies' operations, increasing competition in manufacturing and distribution industries, and growing use of the Internet and e-commerce. Local software development is still a young industry and has received only limited government support, thus opening the door to U.S. software companies to market development tools and invest in the Thai market. Thailand has set a target of \$950 million for the software development business for the domestic and export market in 2006.

The overall packaged software market demand has been met by imports. U.S. developed software is the industry leader and controls over 80 percent of the market, particularly in business integration and transformation software; database management systems and database administration tools and utilities; systems management; and messaging and collaboration applications. Major consumers are government organizations and business entities that regularly budget for such expenses.

Market Statistics (US\$ Millions)**Computer Software Market in Thailand**

The outlook for the computer software market presented here is based on trade estimates and the Association of Thai Computer Industry's estimates. The statistical data below covers packaged software, but not customized software.

				Projected Average Annual Growth Rate for Following <u>2 years (%)</u>
	<u>2000</u>	<u>2001e</u>	<u>2002e</u>	
A. Total Market	209	261	325	20-25
B. Local Production	0	0	0	0
C. Exports	0	0	0	0
D. Import Market	209	261	325	20-25
E. Imports from				
US:	178	222	275	20-25
Exchange Rate	40.16	42.5	42.5	

Notes: The above statistics are unofficial estimates, (e) represents estimate. Exchange rates are based on annual averages.

5. LABORATORY AND SCIENTIFIC INSTRUMENTS (LAB)

Demand for laboratory, scientific and testing equipment in Thailand is expected to grow steadily for the next three years, particularly due to projects being undertaken by the Thai government, the major end-user of such products. The Higher Education Development Project, undertaken by the Ministry of University Affairs to upgrade science and engineering instruction, will entail procurement of laboratory and testing equipment valued around \$34 million through 2003. Besides this, the Thailand Industrial Standards Institute (TISI) plans to set up an industrial goods quality testing facility, at an investment cost of approximately \$150 million. The increasing need to test for Genetically Modified Organisms (GMO) and meet labeling requirements for exported food products has raised concerns from the National Food Institute (NFI) that testing facilities be adequate. There are three GMO testing laboratories operated by the government and the NFI is pressing for additional ones to cope with increasing demand.

Increasing compliance with International Standards Organization (ISO) and Food and Drug Administration standard requirements (GMP, HACCP) is becoming a key issue to Thai companies serving both the domestic and international export markets. Such safety concerns and standard requirements include implementation of European Union food safety requirements beginning in 2001, that extend food safety verification down the production line to ingredients suppliers; the need for all 8,000 food processors and 200 pharmaceutical manufacturers in Thailand to have a Good Manufacturing Practice (GMP) certificates by 2003 (and all new facilities to be issued one as soon as 2001); and the requirement for Thai processed food exporters to comply with Hazardous Analysis Critical Control Point (HACCP) regulations. The analytical instrument market in Thailand is largely supplied by imports, with the U.S. market share approx. 50 percent. Best sales prospects for U.S. exports to Thailand including any equipment and technology that can help meet the above requirements, as well as gas analyzers, spectrometers, incubators, freezers, and stirrers.

Market Statistics (US\$ Millions)**Laboratory and Scientific Instruments Market in Thailand**

	1999	2000	2001e	2002e	Projected Average Annual Growth Rate for Following 2 years (%)
A. Total Market Size	215	236	260	282	7.8
B. Total Local Production:	45	50	60	69	15.3
C. Total Exports:	35	40	48	59	18.7
D. Total Imports:	205	226	248	272	9.8
E. Total Imports from U.S.:	70	81	97	115	18

Note: The above statistics are unofficial estimates, (e) represents estimate. Exchange rate used is US\$ 1 = 45 Baht.

6. EDUCATION & TRAINING SERVICES (EDS)

There is growing recognition in Thailand that training in fundamental skill areas is necessary for the country to avoid falling farther behind its neighbors in economic development. Hence, demand for English language and computer-training centers in Thailand is growing, offering opportunities for U.S. providers of such services. Currently, there are 610 English, science, and mathematics tutorial centers with approximately 350,000 students in Thailand, which together generated approximately \$30 million revenue from tutorial fees in 2000. Additionally, TOEFL and GMAT preparation courses are among the hottest prospects because most universities in Thailand use similar types of testing for their graduate programs' entrance examinations. There are approximately ten TOEFL and GMAT tutorial centers operated by local companies, which also provide study abroad counseling services. The demand for corporate-owned English language training facilities with a proven teaching methodology is especially high, although franchising is not viable in this sector due mainly to the lack of qualified instructors. There are only a handful of international, corporate-owned English language training centers operating in Thailand. Most are from the U.S.

Operation of computer training centers is another market segment ripe for new entrants in Thailand. The Thai Ministry of Education reports that there were more than 800 computer training schools with approximately 320,000 students in 1999, 11 percent higher than in 1998. This sector alone generates an estimated \$40 million in revenue for the computer training business. Computer literacy has become another major qualification for employment and career advancement in Thailand. Most Thai companies have invested in information technology to upgrade their operations, and expect their employees to be trained accordingly. Thus, there is room for high-quality computer training programs, such as those offered at Microsoft and IBM certified centers.

After weathering the economic crisis in 1997-8, major international corporations in Thailand have resumed training in such areas as team building, computers, language

skills, and vocational training. Most Thai corporations will continue to provide training on an “as-needed” basis for their staff.

Market Statistics (US \$ Millions)

Education and Training Services Market in Thailand

	Projected Average Annual Growth Rate for Following 2 <u>years (%)</u>			
	<u>2000</u>	<u>2001e</u>	<u>2002e</u>	
Total Market Size	435	486	545	12
Total Local Production	155	178	205	15
Total Exports	0	0	0	0
Total Imports	280	308	339	12
Total Imports from the US	126	151	181	20
Exchange Rate	40	45	45	

Note: The above statistics are unofficial estimates, (e) represents estimate. Exchange rates are based on annual averages.

7. POLLUTION CONTROL EQUIPMENT (POL)

While the market for Pollution Control Equipment in Thailand has grown in tandem with the country’s economic recovery, it has still not reached its full potential due primarily to lack of government funding for environmental projects. Thailand is moving ahead with a range of enforcement and incentive based programs as well as restructuring the government’s environmental functions and building capacity. Environmental infrastructure demands such as water treatment processors, wastewater treatment systems, solid and medical waste treatment disposal facilities, and air pollution monitoring stations are expected to receive priority funding consideration by the government. These efforts should lead to a stronger, healthier market in the next 2-5 years.

Pollution control equipment accounts for approximately 10 percent of the total environmental market size of almost \$1.35 billion and is comprised of various products, instruments and devices. Over the next year, the potential for the environmental technologies market will increase since regulatory enforcement will be heavily implemented by the Royal Thai Pollution Control Department. Additionally, public awareness of environmental issues is increasing, which in turn will drive demand for improvements. Advanced environmental technology and products are crucial for fixing current environmental problems and for protecting the environment for the future.

Market Statistics (US\$ million)**Pollution Control Equipment Market in Thailand***

	<u>2000</u>	<u>2001e</u>	<u>2002e</u>	Projected Average Annual Growth Rate for Following 2 years (%)
A. Total Market Size	132	136	136	5%
B. Total Local Production	56	52	50	0%
C. Total Imports	76	84	86	5%
D. Imports from U.S.	25	27	28	5%
Exchange Rate	37	45	45	-

*Pollution Prevention Equipment is a subset of the environmental equipment and services market which was estimated at \$1.35 billion with 5-10% growth in late 2000.

Note: The above statistics are unofficial estimates (e) represents estimate. Exchange rates are based on annual averages.

8. COMPUTER SERVICES (CSV)

The computer service market is estimated at \$279 million in 2001, accounting for 19 percent of the overall IT market with a potential annual growth of between 15-20%. This sub-sector covers maintenance and professional services that provide network, system integration, processing, custom-made software, and education and training services. Of the total market, professional services account for 80% or \$223 million in terms of value, representing a 24% annual growth rate. Maintenance services account for the remaining 20% with less than 5% annual growth rate.

Thailand has a short supply of skilled personnel with the right levels of IT awareness to operate the equipment necessary to successfully run Internet, Intranet, and e-commerce applications. There is no local company that meets the U.S. standard for system integrators and only a few partners of U.S. IT vendors qualify as system integrators. Maintenance service for large-scale computer systems is provided by vendors. Local business partners provide service for medium and small-scale systems. On the PC level, resellers provide maintenance service as they consider it a major marketing tool. Consulting services have been profitable in Thailand, particularly for providers such as IT vendors, multinational consulting firms, and local consulting firms, who basically provide professional advice on any aspects of IT related technologies.

Major end-users of U.S. computer services are the government and state enterprises, local and multinational corporations, telecommunication companies, manufacturing companies, and banking and financial institutes. End-users that have good potential to grow are Internet and e-commerce solution/service providers and small and medium-sized enterprises (SME). American companies have dominated the high-end market and can possibly gain market share in the lower-end market by offering services at competitive prices. Due to the lack of local expertise in e-commerce businesses, there

are opportunities for U.S. consulting firms to enter this market and provide business models for e-commerce start ups to SME companies.

Market Statistics (US\$ Millions)

Computer Services Market in Thailand

	<u>2000</u>	<u>2001e</u>	<u>2002e</u>	Projected Average Annual Growth Rate for Following 2 years (%)
Sales by Foreign-Owned Establishments	152	181	208	15
Sales by Locally-Owned Establishments	82	98	112	15
Foreign Sales by Local Establishments	0	0	0	0
Sales by US-located Establishments	122	145	167	15
Exchange Rate	40	45	45	

Notes: The above statistics are unofficial estimates, (e) represents estimate. Exchange rates are annual averages.

9. LEASING SERVICES

Thailand's leasing industry has become more attractive, especially in the auto lease purchase segment. The total market size of the local leasing business is approximately US\$ 2.6 billion which 23% belong to U.S. firms. The industry's future growth potential is approximately 15% per year. Auto lease purchasing has grown due to the expansion in sales of commercial vehicles, supported by affordable leasing services at low interest rates. Unlike hire-purchase, pure leasing which focuses on machinery leases has been slowing down since the economic crisis because local manufacturers have limited capital to invest in equipment. Over the past year, more leasing firms turned to focus more on used car financing, as a result of higher price of new cars and buyers are more interested in good quality used cars. The top three players in the leasing industry are GE Capital Auto Lease (GECAL), Toyota Leasing, and Siam Panich Leasing (SPL). Their combined loan portfolio totals over 40 billion baht (approximately US\$922 million), representing about 38% of the total market size. Factors that will continue to influence the market size are: the entry of new foreign leasing companies with lower funding costs and a stronger financial base; lower and/or fixed interest rate policies resulting from higher competition, and the setting up of auto makers' wholly-owned leasing companies to increase sales and to help car-buyers make decision quicker by providing attractive leasing rate.

Market Statistics (US\$ Millions)
Leasing Services Market in Thailand

	<u>2000</u>	<u>2001e</u>	<u>2002e</u>	Projected Average Annual Growth Rate for Following 2 <u>years (%)</u>
Total Market Size	2,384	2,772	3,223	16
Total Local Production	1,230	1,430	1,663	16
Total Exports	0	0	0	0
Total Imports	1,154	1,342	1,560	16
Import from the US	553	643	747	16
Exchange Rate	40	45	45	

Note: The above statistics are unofficial estimates, (e) represents estimate. Exchange rates are based on annual averages.

10. MEDICAL DEVICES (MED)

The medical device market in Thailand picked up slightly in 2000, will remain stable in 2001, and again will resume growth of 10-20 percent in 2002 and 2003 given that most hospitals plan to replace devices bought before 1997 in this upcoming period. Public hospitals are major buyers of medical devices and supplies in Thailand. Generally, they account for approximately 70 % of total purchases. The possible adverse impact on the medical device market from Thailand's new universal healthcare program, initiated by the new government early this year, might not be as strong as speculated, since public hospitals rely on the government budget for procurement of new equipment rather than on the collected user-fees. Most distributors of medical devices believe that the money subsidized by the MOPH, at \$28 per patient per year for over 30 million Thai who are eligible to enter the program, would compensate for the user-fee collection shortfall. In 1999, there were 943 public hospitals with a combined 102,460 beds, and there were 358 private hospitals with a combined 29,945 beds. Two hundred eighty (78%) of them are located in Bangkok metropolitan area. By comparison, private hospitals account for approximately 30 % of the demand. Overall, the Ministry of Public Health remains the major end-user of medical devices and accessories in Thailand.

About 80 percent of products used in this sector are imported. Imports of medical devices increased 12 percent in 2000 as compared to 1999, due to the modest improvement in Thailand's economic situation, as well as the need to replace old devices. Medical devices from the U.S. are very well received and account for 39 percent of the total imports, as they remain leaders in new technology and are the first choice of most physicians in Thailand. Local production of medical devices in Thailand is limited to less sophisticated devices, mainly due to the limited number of qualified researchers and the inability of Thai companies to invest in the R&D required to produce more sophisticated devices.

Market Statistics (US\$ Millions)
Medical Devices Market in Thailand

	<u>1999</u>	<u>2000</u>	<u>2001e</u>	<u>2002e</u>	Projected Average Annual Growth Rate for Following <u>2 years (%)</u>
A. Total Market Size:	222	249	272	311	12
B. Total Local Production:	230	276	303	333	13
C. Total Exports:	178	222	255	280	16
D. Total Imports:	170	195	224	258	13
E. Total Imports from U.S.:	67	77	89	102	12.7

The above statistics are unofficial estimates (e) represents estimate. Exchange rate used is US\$ 1 = 45 Baht.

11. COMPUTER AND PERIPHERALS (CPT)

The IT market has grown notably since 1999 and is projected to continue growing by 20 percent annually during the next five years. The economic recovery, restructuring of business operations, government support for IT development, growing Internet usage and e-commerce businesses, and growing number of home offices and edutainment businesses primarily drive market growth. The current government is placing greater emphasis on IT development compared to the previous government, as several key members of the new economic team hail from new-economy businesses. In addition, the Ninth National Economic and Social Development Plan (2002-2006) will place high priority on information technology approach, areas to be coped with are IT and telecommunication infrastructure, and laws and regulations for business development relating to IT especially Business-to-Business (B2B) and Business-to-Consumer (B2C).

Thailand imports high quality computer systems, printers, components of networking and Internet configurations. With U.S. products held in high regard, the U.S. dominates about 50% of import market of multi-system, high-end PCs, workstations, servers, data communication equipment and networking products, and laser printers. Major end-users of U.S. products are government agencies and state enterprises, public and private education institutes, and international and large local business entities in the telecommunications, manufacturing and banking sectors. Thailand is a highly competitive market and the PC penetration rate is approximately three percent, with about 70 percent of businesses owning a PC. Sales of PC's are concentrated in the major urban population centers, primarily Bangkok.

Market Statistics (US\$ Millions)
Computer and Peripherals Market in Thailand

The outlook for the computer and peripherals market presented here is based on trade estimates and the Association of Thai Computer Industry's estimates. The statistical data below does not include computer parts that are related to import and export categories

even though Thailand is a major production base for the export of computer hard disks, monitors, keyboards, parts and accessories.

	2000	2001e	2002e	Projected Average Annual Growth Rate for Following 2 years (%)
Total Market	779	909	1045	10 -15
Local Production	273	309	365	15
Exports	0	0	0	0
Import Market	506	600	680	15
Imports from US	253	300	340	10 -15
Exchange Rate	40	42.5	42.5	

Notes: The above statistics are unofficial estimates, (e) represents estimate. Exchange rates are based on annual averages.

12. TELECOMMUNICATIONS EQUIPMENT (TEL)

About 75 percent of the demand for telecommunications equipment in Thailand is satisfied by imports, with the U.S. and Japan the major suppliers holding 16 and 26 percent of the market, respectively. Finland, Germany, the United Kingdom, Sweden, Taiwan, South Korea, and other countries share the remaining 58 percent. Thailand is expected to import telecommunications equipment at a rate of 5 percent per year from 2001 onwards.

Key growth areas include mobile phones, Internet, and E-commerce. Mobile phones use in Thailand increased from about 3.6 million lines in 2000 to 4.4 million lines in 2001. The estimated number of Internet-users, 2.3 million, is expected to double by the end of 2001 and top 6.5 million by 2005. The estimated value of e-transactions in Thailand was \$33 million in 2000, and it is expected to increase to \$7 billion by 2003. Other key growth areas include various value-added services such as: VoIP/VoFR equipment; voice/fax/video/data over IP equipment; IP and frame relay technologies; broadband network equipment; high speed network; terminating units; base-band and short-range modems; fiber optical multiplexer equipment; optical fiber single mode link equipment; digital loop carrier systems; chip card phone production equipment; ADSL equipment; HDSL equipment; web-based systems; and satellite-based communications.

Under a commitment with the World Trade Organization, Thailand must open its telecommunications services market by 2006. The Telecom Act and the establishment of the National Telecommunications Commission are expected to be in place by 2002-03. By 2006, direct foreign competition should be present in the Thai telecommunications market. Several U.S. and foreign companies such as Verizon of the U.S., SingTel of Singapore, Telekom Malaysia, Telenor of Norway, and Orange of the UK have invested and begun participating in the management of several existing telecommunications service operators in Thailand.

Market Statistics (US\$ Millions)**Telecommunications Equipment Market in Thailand**

	<u>2000</u>	<u>2001(e)</u>	<u>2002(e)</u>	Projected Average Annual Growth Rate for Following 2 years (%)
A. Total Market Size:	1250	1300	1400	5-7
B. Total Local Production:	1150	1200	1300	7
C. Total Exports:	805	840	910	7
D. Total Imports:	1100	940	1010	7
E. Total Imports from US:	145	150	165	5-10
Exchange Rate	40	42.5	42.5	

Note: The above statistics are unofficial estimates (e) represents estimate. Exchange rates are based on annual averages.

13. WATER RESOURCES EQUIPMENT & SERVICES (WRE)

Thailand's rapid economic development over the last three decades stimulated an explosive expansion of demand for water services, especially hydropower, irrigation and domestic and industrial water supply. Water resource management is currently under the control of as many as eight different ministries and some 40 government agencies or state enterprises. As the demand for water increases due to population growth, as well as expansion of the industrial and service sectors, all agencies involved in water resource development are preparing plans to construct more projects. The government spends \$800 million to \$1 billion every year on water resource management.

Loans from international financial institutions, such as the ADB and World Bank and aid from foreign governments also finance water resource projects in Thailand. In particular, the Agriculture Ministry and the Asian Development Bank (ADB) agreed in late 1999 on a \$600 million loan to implement agricultural reforms, of which \$200 million will go to water resource management in the Chao Phraya River Basin. The ADB has also assisted with water supply projects in provincial towns and cities by grants of technical assistant services and loans.

The water resources equipment and service market is growing an average of 10 percent annually. There are good prospects for engineering consultant services involved in the development and management of large-scale water resources projects, particularly technologies for dams, drainage systems and pipe irrigation. However, competition is strong. Japanese suppliers are leading the engineering consultant services market with a 40 percent share, followed by suppliers from the European Union countries. Their dominance is also tied to an increase in aid programs and lending activities. Japan, Korea and the People Republic of China dominate the machinery and equipment market. Local construction companies control the construction service market. At present, US products and services account for 15 percent of total imports but the potential does exist to expand market share.

Market Statistics (US\$ Millions)**Water Resources Equipment & Services Market in Thailand**

	<u>2000</u>	<u>2001e</u>	<u>2002e</u>	Projected Average Annual Growth Rate for Following 2 years (%)
A. Total Market Size	132	136	136	5%
B. Total Local Production	56	52	50	0%
C. Total Imports	76	84	86	5%
D. Imports from U.S.	25	27	28	5%
Exchange Rate	37	45	45	-

Note: The above statistics are unofficial estimates, (e) represents estimate. Exchange rates are based on annual averages.

14. ELECTRONIC INDUSTRY PRODUCTION / TEST EQUIPMENT (EIP)

Increasing demand for electronic components worldwide in the past decade has resulted in the rapid growth of the EIP market in Thailand. Industrial sources estimate that Thailand's electronics business has grown 20-30 percent during the last five years. The EIP market has also registered annual growth of 5-10 percent to support both new investment as well as expansion of existing manufacturing facilities. The slowdown in the U.S. and Japan is unlikely to impact this young, unsaturated and strong growth market given that there is greater demand to shorten the cycle of the world's electronics market. The electronics industry generated about \$18 billion or 26.6 percent of Thailand's total export revenue in 2000. Electronics are predicted to be the top export item with a projected export value of \$19.6 billion in 2001, representing 8.4 percent growth and accounting for 25 percent of total export revenue.

Thailand aims to be a production hub in the region for components of semiconductors, hard-disk drives and fiber optics products. Production of software, electrical appliances and wireless local loops is also on the rise to support industrial sectors such as automotive, micro controller and other high technology industries. Production in the telecommunication industry in Thailand is expected to grow 30 percent over the next five years. Supporting industries, especially leasing of machinery to produce hard disk drives and assemble IC and PCB will also rise. All production and test equipment is imported, with the US share about 5-10 percent of total importation. Plant executives usually make procurement of equipment for midstream to downstream manufacturing such as assembly and surface mounting machines, while the head office decides procurement of upstream technology.

Market Statistics (US\$ Millions)**Electronic Industry Production/ Testing Equipment Market in Thailand**

The outlook for the EIP market presented here is based on trade estimates by the Customs Department and the Department of Business Economies.

	<u>2000</u>	<u>2001(e)</u>	<u>2002(e)</u>	Projected Average Annual Growth Rate for Following <u>2 years (%)</u>
A. Total Market:	750	800	860	7.0
B. Local Production:	0	0	0	0
C. Exports:	0	0	0	0
D. Import Market:	750	800	860	7.0
E. Imports from US:	75	80	86	7.0
Exchange Rate	40	42.5	42.5	

Notes: The above statistics are unofficial estimates, (e) represents estimate. Exchange rates are based on annual averages.

15. FOOD PROCESSING EQUIPMENT (FPP)

Exports of food products to major consuming nations offer strong prospects for Thailand, and as such, as receive continued economic emphasis. With net exports of \$5 billion in 2000, the Thai government is promoting Thailand as the “kitchen of the world” and is preparing a master plan to increase the array of value-added products in the food sector. Given Thailand’s export competitiveness in this sector, major food exporters have expanded their production capacity through new machinery purchases or upgrades to meet demand for a variety of products in major markets and satisfy international quality standards including HACCP and ISO. In the short term, the export market for Thai food products is mixed this year due to slowing in Thailand’s export markets, particularly to the U.S. and Japan. Accordingly, the market for food processing equipment in Thailand is expected to grow by only 4.5 to 10 percent over the next two years, compared to 20 percent in 2000. Overall, U.S. food processing equipment has a 22 percent share of the import market and is well regarded for its quality, durability, operability and easy maintenance.

Market Statistics (US\$ Millions)
Food Processing Equipment

	<u>2000</u>	<u>2001(e)</u>	<u>2002e</u>	Projected Average Annual Growth Rate for Following <u>2 years (%)</u>
A. Total Market Size	397.8	437.5	481.3	10.1
B. Total Local Production	242.6	326.6	432.5	32.4
C. Total Exports	208.1	270.6	351.7	29.9
D. Total Imports	363.3	381.5	400.5	4.9
E. Total Imports from U.S.	98.1	84.0	88.1	4.5

Note: The above statistics are unofficial estimates; (e) represents estimate. Exchange rate US\$ 1 = 45 Baht.

SIGNIFICANT U.S. INVESTMENT OPPORTUNITIES

The Government of the United States acknowledges the contribution that outward foreign direct investment can make to the U.S. economy. U.S. foreign direct investment is increasingly viewed as a complement or even a necessary component of trade. Nearly 60 % of total U.S. exports originate with American firms with investment abroad. Recognizing the benefits that U.S. outward investment brings to the U.S. economy, the Government of the United States undertakes initiatives, such as Overseas Private Investment Corporation (OPIC) programs, Bilateral Investment Treaty Negotiations and Business Facilitation Programs, that support U.S. investors.

The U.S. is Thailand's second largest foreign investor (following Japan) with a total accumulated direct investment of over US\$15 billion, with half of U.S. investments in the energy and petrochemical industries. For example, General Motors opened a \$600 million new vehicle assembly plant in mid-2000, joining Ford and other automotive manufacturers in Thailand, solidifying the country's reputation as the "Detroit of Southeast Asia". Increasingly, companies investing in Thailand are those requiring skilled but cost-competitive labor. In addition, as Thailand slowly moves ahead with its near to medium term plans to privatize many state-owned enterprises, additional opportunities both for investment as well as sales of equipment should arise in important sectors such as energy, aviation and telecommunications. Foreign partners, do not only bring capital, but also technology, management, and technical skills. To encourage investment, the Royal Thai Government is revising many of its laws and regulations and examining its investment incentive programs.

As reported by the Board of Investment (BOI) the number of investment projects in the first five months of 2001 numbered 242. Despite the economic crisis, Japan continued to be the biggest foreign investor in Thailand, with investment projects in the country totaling Bt 22 billion (approx. US\$501 million). The second largest investor in Thailand

was Singapore with Bt 3.9 billion (US\$88 million) followed by the U.S. with projects worth Bt 3.7 billion (US\$82 million).

The following infrastructure privatization programs will generate sample investment opportunities for U.S. firms in the near-term:

- Airports Privatization Program
- Construction of the New Bangkok International Airport (NBIA)
- Thai Airways International Company Limited Privatization
- Privatization of Power Plants

	1998			1999		
	No. of Projects	Investment (Bt'm)	Investment (US\$m)	No. of Projects	Investment (Bt'm)	Investment (US\$m)
○ Net applications						
Expansion projects	25	12,240.6	295.9	28	34,030.3	899.3
New projects	35	7,152.8	172.9	30	5,194.7	137.3
Total	60	19,393.4	468.8	58	39,225.0	1,036.6
○ Application approved						
Expansion projects	22	11,684.8	282.4	28	41,068.0	1,085.3
New projects	40	6,960.7	168.3	24	5,149.1	136.1
Total	62	18,645.5	450.7	52	46,217.1	1,221.4

	2000			2001 (Jan-Jun)		
	No. of Projects	Investment (Bt'm)	Investment (US\$m)	No. of Projects	Investment (Bt'm)	Investment (US\$m)
○ Net applications						
Expansion projects	24	25,208.4	627.7	3	474.3	10.7
New projects	31	4,691.6	116.8	12	2,366.0	53.4
Total	55	29,900.0	744.5	15	2,840.3	64.1
○ Application approved						
Expansion projects	32	25,159.8	626.5	10	16,571.9	374.0
New projects	40	12,591.9	313.5	8	12,017.6	271.2
Total	72	37,751.7	940.0	18	28,589.5	645.2

Note: US investment projects refer to projects with US capital of at least 10%; 1998 FX is Bt41.37/USD, 1999 FX is Bt37.84/USD, 2000 FX is Bt40.16/USD, and 2001 (Jan-Jun) FX is Bt44.31/USD.

The following infrastructure privatization programs will generate ample investment opportunities for U.S. firms in the near-term:

- Airports Privatization Program
- Construction of the New Bangkok International Airport (NBIA)

- Thai Airways International Company Limited Privatization
- Privatization of Power Plants